Pending Claims:

The listing of claims represents the claims pending in this application.

Listing of Claims:

1. (Currently amended) A method for ~~heating~~ heat treating a plurality of metallic microelectronic structures attached to a non-metallic substrate, ~~wherein each of the plurality of microelectronic structures is comprised of a metallic material, and ones of the plurality of metallic microelectronic structures are insulated from other ones of the plurality of microelectronic structures,~~ the method comprising the steps of:

placing the non-metallic substrate and the plurality of microelectronic structures in an oscillating electromagnetic field, whereby the plurality of microelectronic structures are heated by the oscillating electromagnetic field and the non-metallic substrate is essentially not heated by the oscillating electromagnetic field;

maintaining the non-metallic substrate and the plurality of microelectronic structures in the oscillating electromagnetic field until each of the plurality of microelectronic structures obtains a defined heat-treatment temperature substantially greater than an ambient temperature and thereby improves a mechanical operating property of the plurality of microelectronic structures;

removing the non-metallic substrate and the plurality of microelectronic structures from the oscillating electromagnetic field; and

cooling the plurality of microelectronic structures to the ambient temperature.

2. (Original) The method according to Claim 1, wherein the placing step further comprises placing the plurality of microelectronic structures in the oscillating electromagnetic field, wherein the plurality of microelectronic structures are comprised of a ferromagnetic material.

3. (Original) The method according to Claim 2, wherein the placing step further comprises placing the plurality of microelectronic structures in the oscillating electromagnetic field, wherein ferromagnetic material is a nickel-cobalt alloy.

4. (Original) The method according to Claim 2, further comprising tuning the oscillating electromagnetic field to selectively heat the ferromagnetic material.

5. (Original) The method according to Claim 1, wherein the maintaining step further comprises obtaining the heat-treatment temperature greater than 800°C.

6. (Original) The method according to Claim 1, wherein the maintaining step further comprises obtaining the heat-treatment temperature greater than 1300°C.

7. (Original) The method according to Claim 1, further comprising generating the oscillating electromagnetic field between a pair of parallel plates.

8. (Original) The method according to Claim 1, further comprising generating the oscillating electromagnetic field between arms of a hairpin coil.

9. (Original) The method according to Claim 1, further comprising generating the oscillating electromagnetic field using a coil comprised of a copper tube formed into a coil shape.

10. (Currrently amended) The method according to Claim 1, further comprising tuning ~~the~~ a frequency of the oscillating electromagnetic field to a resonant frequency of a field generator circuit.

11. (Currently amended) The method according to Claim 1, further comprising tuning ~~the~~ a frequency of the oscillating electromagnetic field to between about 10 MHz-15 MHz.

12. (Original) The method according to Claim 1, further comprising measuring a temperature of the plurality of microelectronic structures by applying a heat-indicating paint to the plurality of microelectronic structures prior to the maintaining step.

13. (Canceled)

14. (New) The method according to Claim 1 wherein:

said non-metallic substrate and said plurality of microelectronic structures comprise an interposer,

a first subset of said microelectronic structures are disposed on a first side of said non-metallic substrate,

a second subset of said microelectronic structures are disposed on a second opposing side of said non-metallic substrate, and

ones of said first subset of microelectronic structures are electrically connected to ones of said second subset of microelectronic substrates.

15. (New) The method according to Claim 1 wherein:

said non-metallic substrate and said plurality of microelectronic structures comprise a space transformer,

said microelectronic structures are disposed at a first pitch on a first side of said non-metallic substrate,

a plurality of electrically conductive terminals are disposed at a second pitch on a second opposite side of said non-metallic substrate,

ones of said microelectronic structures are electrically connected ones of said electrically conductive terminals, and

the first pitch is tighter than the second pitch.

16. (New) The method according to Claim 1 wherein the mechanical operating property of the plurality of microelectronic structures improved is at least one of improved yield strength, improved resiliency to fatigue, decreased brittleness, or improved hardness.